

ABSTRACT OF THE DISCLOSURE

5 A semiconductor device having a main processor and a  
coprocessor for data processing is disclosed, the device  
comprising a main program memory for storing main processor  
instructions and a first portion of coprocessor instructions, a  
coprocessor program memory for storing a second portion of  
coprocessor instructions, and a predecoder for predecoding at  
10 least one bit of each instruction fetched from the main program  
memory and for generating an active coprocessor control signal  
upon predecoding a coprocessor type instruction, wherein the  
second portion of coprocessor instructions are fetched directly  
from the coprocessor program memory and the first portion and the  
second portion of coprocessor instructions are processed by the  
coprocessor upon receipt of the active coprocessor control  
signal.